



Amankwah-Amoah, J. (2016). Ebola and global airline business: An integrated framework of companies' responses to adverse environmental shock. *Thunderbird International Business Review*, 58(5), 385-297. <https://doi.org/10.1002/tie.21789>

Peer reviewed version

Link to published version (if available):  
[10.1002/tie.21789](https://doi.org/10.1002/tie.21789)

[Link to publication record in Explore Bristol Research](#)  
PDF-document

This is the author accepted manuscript (AAM). The final published version (version of record) is available online via Wiley at [10.1002/tie.21789](https://doi.org/10.1002/tie.21789).

## University of Bristol - Explore Bristol Research

### General rights

This document is made available in accordance with publisher policies. Please cite only the published version using the reference above. Full terms of use are available:  
<http://www.bristol.ac.uk/red/research-policy/pure/user-guides/ebr-terms/>

**Ebola and global airline business: An integrated framework of companies' responses to  
adverse environmental shock**

**Dr. Joseph Amankwah-Amoah\***

Associate Professor of Management

Bristol University

School of Economics, Finance and Management

8 Woodland Road, Clifton, Bristol, BS8 1TN

England, UK

**E-mail:** [Joseph.amankwah-amoah@bristol.ac.uk](mailto:Joseph.amankwah-amoah@bristol.ac.uk)

TEL: +44 (0) 117 3311042

**A brief biosketch**

Dr JosephAmankwah-Amoah is an associate professor (Senior Lecturer) of Management at Bristol University. His research interests include global business strategy, strategic renewal and lateral hiring in emerging economies. He has published articles in journals such as Technological Forecasting & Social Change, International Journal of HRM, Business History, Group & Organisation Management, Journal of Business Research, Thunderbird International Business Review, Strategic Change and Journal of General Management.

## **Abstract**

In spite of a growing body of literature on risk management, our understanding of how companies respond to unforeseen disruptions such as pandemics or outbreaks remains limited. This study advances tourism management, operations strategy and risk management research by examining how airlines have responded to the Ebola outbreak in West Africa. Using archival records, the study uncovered three unique stages in airlines' responses to the outbreak. The study provides insights and rationale behind strategic persistence and downscaling approaches adopted by different airlines. The implications for risk management and public policy are examined.

**Keywords:** Africa: Air travel: Ebola: West Africa: risk management: environmental jolts; airlines.

## **Introduction**

Over the past half a century, the increasingly interconnected global economy has unleashed copious opportunities as well as new sources risks which can easily transmit across national borders to disrupt and hamper firms' operations (World Bank, 2013; Revilla & Sáenz, 2014). As firms internationalise, some become increasingly vulnerable and exposed to financial, political and health shocks which are contagious in nature (see Bode, Wagner, Petersen & Ellram, 2011).

Despite decades of research on risk management (World Bank, 2013) and environmental jolts (Bradley, 2015; Braunscheidel & Suresh, 2009), scholars have paid little attention to the strategic behaviour and responses of companies in the wake of major disruptions (Bode et al., 2011). In spite of growing concern about the international spread of deadly and contagious diseases (World Bank, 2013), scholars in this area have also largely circumvented how firms behave in such an environment. Prominent examples of such outbreaks include bird flu, Severe Acute Respiratory Syndrome and, more recently, Ebola.

The main purpose in this paper is to examine how companies respond in the wake of major disruptions, e.g. global/regional outbreaks of contagious diseases. In attempting to resolve the deficit in our understanding, the paper focuses specifically on the contemporary issue of the Ebola outbreak in West Africa and how airlines responded in the wake of the outbreak. The Ebola outbreak has been recognised as a contemporary international business risk known as “tail risk”, which refers to the unpredicted and disruptive nature (Atkins & Bolger, 2014). The outbreak of such diseases has potential to not only disrupt the supply chain, but often leave many investors and businesses in a quandary.

The study makes a number of contributions to both the business strategy and risk management literature. First, although some studies have indicated that firm’s responses under such circumstances tend to differ (Sheffi, 2005), it remains unclear as to the underlying mechanisms through which firms respond to such risks (Bode et al., 2011). The study seeks to fill this gap in our understanding by developing an integrated stage-based approach of firms’ responses to such disruption. Furthermore, by integrating the environmental jolts (Meyer, 1982; Bradley, 2015) and strategic responses to environmental jolts literature (Gittell, Cameron, Lim & Rivas, 2006), this study offers a unique lens through which to view how firms achieve resilience after disruption. The article further extends the existing literature by outlining strategies on how firms can mitigate the risk stemming from such outbreaks whilst concurrently maintaining core operations.

The rest of the article proceeds as follows. In the next section, a brief overview of the literature on environmental jolts and firm responses to environmental change is presented. This is followed by an examination of the approaches to data collection, and then an overview of the airline industry in Africa and the Ebola outbreak in West Africa is presented. The penultimate section sets out a range of airlines’ responses to the outbreak. The final section outlines the contributions to literature and public policy.

## **Responses to environmental jolts: An integrative review**

Environmental jolts can be defined as “transient perturbations whose occurrences are difficult to foresee and whose impacts on organisations are disruptive and potentially inimical” (Meyer, 1982, p. 515; see also Bradley, 2015). In order to illuminate our understanding of how companies respond to environmental jolt/disruptions, the paper integrates two streams of literature, i.e. disruption and firm responses to environmental change.

Disruption refers to unpredictable events that unsettle the normal flow and activities of the firm (Kleindorfer & Saad, 2005). Disruption can stem from both internal and external shocks including natural and man-made disasters. Disruptions can be conceptualised to include shocks which alter firms’ activities and ability to operate at normal levels (World Bank, 2013). In the face of environmental shocks, firm survival is often threatened which then triggers a range of strategic responses to re-orient with the environment (Bode et al., 2011).

A stream of research anchored in the resource-based perspective (Barney, 1991) indicates that firms respond to such disruptions by turning to their resource utilisation and capability deployments (Juttner & Maklan, 2011). Some scholars have suggested that firms whose survival is threatened are more likely to redirect resources away from peripheral activities towards core businesses and thereby effectively reducing scope operations in favour of efficiency savings (Hutzschenreuter & Gröne, 2009). When external shocks alter the competitive environment, firms may seek new resources and expertise to help to adapt (Posen & Levinthal, 2012). A line of research indicates that some firms are more likely to respond by reducing capacity and gradually increasing it until the demand eventually returns to pre-crisis levels (Hutzschenreuter & Gröne, 2009).

A stream of research has suggested that firms often employ cost retrenchment which includes cutting costs and implementing strict cost controls as responses to crisis (Pearce & Robbins, 1993; Morrow, Johnson & Busenitz, 2004). Asset retrenchment encompasses the offloading of

assets in open markets (Morrow et al., 2004). In the face of disruption, some firms may opt to downscale and downscope activities (DeWitt, 1998). Downscaling refers to “a reduction in the scale of operations”, whilst downscoping refers to “the sale of entire business units” (Morrow et al., 2004, p. 191).

One insightful piece of work in this area by Tomlin (2006) identified two distinct responses, i.e. mitigation tactics (firm response in advance of a disruption which incurs costs irrespective of whether the incident occurs or not) and “contingency tactics” (response tactics which are adopted only if a disruption ensues). This line of work suggests that there can be some kind of stage-based approach to disruption. One stream of research has suggested that in the wake of such events, firms are expected to demonstrate concern for the wider society (Litz, 1996). Such strategic actions have been identified to position firms to win customers’ patronage in the post-disruption environment (Litz, 1996; Revilla & Sáenz, 2014).

A related line of research indicates that a firm’s ability to recover in a timely manner and bring operations to pre-disruption levels depends on factors such as resources and the nature of the disruption (Christopher & Peck, 2004). Indeed, well-endowed firms with slack resources can better absorb disruption effects and recover faster than their rivals (Sheffi & Rice, 2005). This can be referred to as supply chain resilience, i.e. the ability to respond and return to pre-disruption levels (Juttner & Maklan, 2011). Building on these streams of research, Figure 1 shows an integrated model of disruption and firm responses.

-----  
**Insert Figure 1 about here**  
-----

### **Research design**

#### **The research context: Ebola in Africa**

Tourism was one of the fastest growing sectors across the African continent, fuelling the growth of aviation before the Ebola outbreak (Official Airline Guide (OAG), 2012). The emergence of the Ebola virus in Africa can be traced as far back as 1976 when the first case

was reported in the isolated regions of Sudan and in the DR Congo near the Ebola River (The Economist, 2014f). Although epidemiologists had been aware of the disease, in December 2013 the first case of the recent outbreak was reported in Guéckédou, Guinea near the border with Liberia and Sierra Leone (The Economist, 2015). The previous outbreaks of the disease were largely confined to remote and relatively small populations (Fry, 2014). Suddenly, the devastating effects of the recent outbreak transformed Ebola from an obscure concern of epidemiologists into front-page news.

Given that the symptoms resemble other more common ailments in the region such as malaria, the emergence and spread were largely concealed and killed many before gaining prominence in the international press and the wider attention of the world (The Economist, 2014f). Another contributory factor for the spread was the interconnected nature of trade and close proximity of the early cases to neighbouring countries. This meant that the disease eventually spread from Guinea to Liberia, Sierra Leone and beyond.

Although Ebola was not the first outbreak to “catch the world off-guard” (World Bank, 2013), the three affected countries appeared less prepared to handle the disruptions to businesses and the wider population (Amankwah-Amoah, 2015b; The Economist, 2014f). One of the factors that accounted for Ebola’s scary reputation was its lethality (high mortality rate) in the face of very few effective vaccines or courses of treatment (Cookson, 2014). Public concern over Ebola also stems from the slowness of the three governments and international responses (Atkins & Bolger, 2014). As part of the preventative measures, individuals with suspected symptoms were quarantined for 21 days and kept under observation, public gatherings and border crossings from the affected countries were curtailed and major sports events were also suspended to stop the spread of Ebola (WHO, 2014). The necessary quarantines imposed by the affected countries virtually brought economic activity to a standstill or even sent it into decline (The Economist, 2014f).

Interestingly enough, the quarantine restricted the seasonal harvest and transportation of raw materials, but it helped to halt the spread of virus. For months, fear and inactivity characterised the economies of the three countries as quarantines became more widespread. Consequently, governments around the globe, including neighbouring African countries, issued advisory warnings against non-essential travel to the three countries. Given that the nature of the outbreak outpaced the capacity of the individual countries to cope with it, international collaborations and actions were required to respond. Indeed, the three affected nations were among the world's poorest countries.

Another explanation as to why the three affected countries struggled to contain the virus was the existence of weak and under-developed health systems (England & Jenkins, 2014). The countries had weak and poorly staffed health systems with limited preventive health measures. At the time, the health systems in the three countries were characterised as “under-resourced, under-staffed and poorly equipped” (Save the Children (STC), 2015, p. vii). Guinea spent a mere \$62 per person on health annually compared with \$3,364 in Britain, whereas Sierra Leone had two doctors per 100,000 people compared with 245 in the United States (The Economist, 2014f). Indeed, in 2012, the government of Liberia spent \$20 per person per year on health, Guinea \$9 and Sierra Leone \$16 compared with the \$7,704 spent by the Norwegian government on health for each citizen (STC, 2015).

Given that the countries faced severe capacity constraints with undeveloped healthcare sectors and weak governments, international organisations such as World Bank and World Health Organisation (WHO) helped in terms of financial and human capital to arrest the situation. By the first half of 2015, the number of new cases was abating and more areas were being declared Ebola free. However, the damage to the countries' economies was highly visible with a death toll of more than 10,000 mainly in the three countries. The World Bank (2014) projected an estimated \$32.6 billion deficit in the economies of the affected countries. Although the three



affected countries account for around 1 per cent of sub-Saharan economic output, the knock-on effects extended beyond the continent (Atkins & Bolger, 2014). One of the industries heavily affected in terms of firm behaviour and strategy is global civil aviation. The airline industry provides a fertile ground to explore this issue.

### **Data sources**

Prior to the outbreak, relatively few businesses have ever had to confront and respond to an epidemic in a comprehensive manner. Given the unexplored and episodic nature of the Ebola outbreak in West Africa, multiple-illustrative cases approach was adopted to provide a more detailed and comprehensive examination of a range of airlines' responses (see Yin, 2009; Welch, 2000). The account was developed by relying on archival records and publicly available data to analyse the effects. Archival sources such as business periodicals (e.g. *The Economist*, *Airline Business* and *Flight International*), national and local newspapers, and industry internet sites (e.g. *Flight Global Online*) were utilised.

The archival records also included reports and press releases by airlines, WHO, International Air Transport Association (IATA), UK Civil Aviation Authority, International Civil Aviation Organization, World Bank, US Centers for Disease Control and Prevention and governments. Press releases from global airlines on Ebola and the anticipated effects on their networks and operations were also examined. The archival approach has been found to be particularly effective in exploring companies' responses to such disruptions (Gittell et al., 2006; see also Amankwah-Amoah & Durugbo, 2016). Indeed, archival records are "particularly suited to generating developmental explanations, in other words, explaining processes of change and evolution" (Welch, 2000, p. 198). These data sources led to the identification of unique processes, patterns and dynamics of responses in the face of the disruptions. Based on this, the airlines' responses to Ebola were uncovered.

### **How has the Ebola outbreak affected the airline industry?**

By the turn of the twenty-first century, the African aviation sector was gathering steam by improving connectivity. In the years leading up to the outbreak, Africa had come to be regarded as the world's fastest growing continent (The Economist, 2013; see also Amankwah-Amoah, 2015a) and the aviation sector has been projected to grow at an annualised rate of 4.7% higher than the global average of 4.1% (OAG, 2014b). Although aviation supports around seven million jobs and contributes \$80 billion to Africa's GDP, and travel and tourism accounted for 8.5% of Africa's GDP in 2013 (World Travel and Tourism Council, 2013), progress and economic development have often been stifled by factors such as the lack of effective public policy and inadequate intra-African air connectivity (IATA, 2014). Indeed, the IATA has long stressed the importance of intra-African air connectivity in fostering economic development across the continent (IATA, 2014).

Nevertheless, Africa still lags behind its global rivals in utilising air transport as a means of achieving sustainable development. During the course of the twentieth century, Africa's major attempt to liberalise the industry was at the Yamoussoukro Convention on Market Access for Air Transport in Africa in 1988 (Amankwah-Amoah, 2015c). The Yamoussoukro Declaration (YD) which emerged outlines steps towards the easing of restrictions inhibiting intra-African connectivity and served as a catalyst for further development (Amankwah-Amoah & Debrah, 2010, 2011, 2014). The early years of the 21st century witnessed a number of initiatives by governments to speed up its implementation.

Nevertheless, the YD has not been fully implemented. Indeed, it has been projected that liberalisation to ease restrictions of intra-African connectivity across 12 African countries (i.e. Algeria, Angola, Egypt, Ethiopia, Ghana, Kenya, Namibia, Nigeria, Senegal, South Africa, Tunisia and Uganda) could create around 55,000 jobs and add about \$1.3 billion to the GDP (InterVISTAS, 2014). The incremental deregulations in African countries such as Nigeria,

South Africa, Ghana and Cote d'Ivoire have accounted for the thriving domestic airline industries. Due to underdeveloped intra-African aviation connectivity of economies and trade, the growth potential of airlines is often constrained.

In spite of the above constraints, connectivity between Africa and Europe has continued to improve partly due to the emergence of new airlines and expansion by existing players. From 2002 to 2012, around 1,161 new routes to, from and within Africa were created as more airlines took advantage of the economic growth and growth in air transport in the region (OAG, 2012). As shown in Table 1, over the course of the decade, intra-Africa connections accounted for 53.6% of the new routes. One of the earliest manifestations of the effects of Ebola were the travel bans imposed by governments of the region including Senegal, Côte d'Ivoire, Gambia, Kenya, Zambia and South Africa (Rivers, 2014). The motivation behind these actions was the desire to tackle the disease at source and to stop the spread. African nations such as South Africa and Senegal took measures including the closure of borders (e.g. Senegal and Chad) and a ban on travellers from the affected countries (Anderson, 2014).

-----  
**Insert Table 1 about here**  
-----

In addition to the bans, two main types of screenings were imposed. First was the exit screening in affected nations and countries that maintained air services or handled passengers from the affected zone. Second was the entry screening at destination airports. This was mainly for passengers who have been to the affected area. In addition, a policy of “enhanced screening” for Ebola was also introduced and implemented by countries such as the US, Canada and France (Carter & Meisel, 2014; Mabey, Flasche & Edmunds, 2014). Passengers from the affected nations were subjected to screening. Travellers had their temperatures checked and were required to complete a health questionnaire. The checks and screenings were geared towards assuring regulatory authorities and governments of their compliance. Although

Ebola virus is not transmitted by air, air travel has played a role in its ability to spread as people travel across national borders (The Economist, 2014d). As Figure 2 shows, there are various effects of the Ebola outbreak at local, national and regional levels.

-----  
**Insert Figure 2 about here**  
-----

### **Airlines' responses to Ebola**

The analysis and synthesis of the archival data uncovered that airlines' responses to Ebola appeared to pass through three unique stages. The first stage began with recognition of the outbreak but a lack of clear direction about the potential effects curtailed firms' responses. The next stage entailed actions designed to reduce their levels of commitment and exposure to the affected countries. Here, some airlines engaged in strategic persistence even in the face of the environmental change. The final stage focused on recovery after the disruption. Figure 3 demonstrates the evolution of the firms' strategies in response to Ebola. Below we tease out key features of the three stages.

-----  
**Insert Figure 3 about here**  
-----

### **Stage 1: Environmental scanning – monitoring and assessment**

One of earliest effects of the outbreak was a period of monitoring and assessment – environmental scanning. Scanning in this context refers to the steps taken by airlines to collect and analyse information about the outbreak to assist top executives in responding. This stage entails activities such as detecting and making sense of the outbreak. The data suggest that limited information about the virus and lack of clarity about whether airlines should continue or discontinue services, characterised this phase. The analysis uncovered that lack of early warning and surveillance systems meant that regional companies and the international community responses were “far too slow to identify the scale of this outbreak and to act” (STC, 2015, p. vii). As such, firms' responses were mute in the face of a lack of clear information and

directives. In addition, the isolated nature of the early cases also meant that airlines broadly confined their activities to scanning and making sense of the event. During this phase, the following quote from Kenya Airways press release exemplifies the nature of firms' response:

*"We continuously monitor updates from WHO and the IATA on the disease, its spread and for guidelines on recommended actions ... So far Ebola has not been declared an epidemic/pandemic. No travel bans or advisory have been given or recommended. Withdrawing our flights to these key destinations given the safeguards already placed by the respective governments and global health authorities would amount to a corporate placement of unnecessary travel advisory."* (Naikuni, 2014, p. nd)

During this period, the WHO cautioned airlines not to discontinue air services to the affected countries. The uncertainty and lack of clarity of the nature, effects and scope of the outbreak led to strategic persistence by some airlines. In much of this period, considerable attention was devoted to monitoring the embryonic situation and reported new cases. Superior scanning capabilities appeared particularly important in airlines' ability to respond in a timely manner.

### **Stage 2: Retrenchment (downscaling) strategy**

As more evidence emerged that the initial assessment had underestimated the contagion nature of the virus and its ability to stay undetected during the incubation period, the panic, strong overreactions and confusion were as disruptive as the outbreak itself (The Economist, 2014e). The spread of the virus dented consumers' confidence and disrupted some hub-and-spoke systems of regional airlines. The problem was exacerbated by the fact that the outbreak combined two potent fears, i.e. flying and contagious disease (The Economist, 2014b). Following the decline of tourism stemming from the cancellation of bookings, airlines were forced to freeze plans to expand to new routes in the region. Airlines faced regional and domestic shocks as tourism to countries such as Ghana and Nigeria were affected, even though Ghana was yet to report a single case. The preponderance of data suggests that the transition from Phase 1 to Phase 2 was accompanied by a sharp turn from largely monitoring and

assessment roles to the suspension of services by many airlines. Retrenchment in this context refers to the reduction of costs and elimination of routes in response to the disruption (Morrow et al., 2004). In the face of these government restrictions and subdued demand for travel in the regions, many airlines were forced to suspend services until demand returned.

The analysis uncovered that global and regional airlines such as Air Côte d'Ivoire, ASKY Airlines, Arik Air, BA, Emirates Airlines and Kenya Airways suspended or cancelled a combined 70 scheduled flights to Liberia, 76 to Guinea and 70 to Sierra Leone (Anderson, 2014). As more countries imposed travel restrictions and banned flights to and from the affected countries, air travel in the region was disrupted. The outbreak also disrupted airlines' connectivity (Rivers, 2014). The airlines sought to redeploy their resources by cancelling flights and suspending services to many other routes. Another effect is demonstrated in the number of scheduled flights.

In May 2014, there were around 427 flights from Sierra Leone and Liberia to destinations around the world. However, by October the same year as the number of reported Ebola incidents surged, many airlines became reluctant to continue air services, leading to a sharp decline in the number of scheduled flights to 52, a decrease of around 64% in both flights and seats (OAG, 2014a). Sierra Leone was more severely affected with a 13% decline in seat capacity in 2014 relative to 2013 (OAG, 2014b). Indeed, in August 2014, of 590 monthly flights scheduled to the three countries, 216 were cancelled (OAG, 2014a; Anderson, 2014). Overall, the year-on-year capacity and frequency had shrunk by around 64% across the three affected airports (OAG, 2014a).

Due to the interconnected nature of the airline industry in Africa, airlines across the globe also cancelled more than a third of international flights to three West African countries (Anderson, 2014). In many accounts, these strategies were adopted motivated by the desire to reduce to

exposure. Table 2 provides a summary of a number of airlines affected by the outbreak and their responses.

-----  
**Insert Table 2 about here**  
-----

### **Illustrative cases of African and non-African airlines**

The accumulated evidence suggests that the emergence of Ebola had varying effects on African airlines. The analysis uncovered that suspension of air services and cancellations of flights became very common as the effects of Ebola unfolded. Airlines whose operations were largely intra-African with connections to the affected countries were heavily affected. The outbreak disrupted some air transport networks across the region following the cancellation and suspension of flights by major airlines.

One type of response was airlines purposefully seeking to circumvent the three affected countries. A good illustrative case is ASKY Airlines. ASKY was suspended by the Nigerian Civil Aviation Authority (NCAA) over the transportation of the first Ebola victim into the country (Osuagwu, 2014). One of their passengers with the virus flew from Liberia to Nigeria via the Togolese capital, Lomé and thereby transmitting the disease to Nigeria. This was devastating for the regional player with 80 weekly flights into Lagos and Abuja (Bellanaija, 2014). The NCAA asserted that the airline officials had failed to demonstrate effective preventative measures to stop new cases and adequate screening of passengers in the affected areas (Osuagwu, 2014). ASKY Airlines operates to 22 cities in West and Central Africa so the suspension had knock-on effects on its wider operations and network.

Following this incident, in July 2014 the Pan-African airline suspended all flights to and from Liberia and Sierra Leone as a precautionary measure to help ensure the safety of its travellers (The Guardian, 2014). In so doing, it became only the second African airline, after Nigeria's largest airline – Arik Air, to do so in the wake of the crisis (BBC, 2014). This was

accompanied by the suspension of flights to Conakry (Guinea), completing the firm's strategy to disconnect its network from the affected zone. The illustrative quote below provides further justification for the suspension:

*"We had to suspend all our weekly flights to Monrovia and [the Sierra Leonean capital] Freetown with the interest of our passengers in mind."* (Yissehak Zewoldi, ASKY's chief executive, cited in Rivers, 2014, p. 66–67)

However, the airline was eventually allowed to resume services to the country but the damage to its image and operations was evident. Another good illustration was the case of Ethiopian Airlines, one of the fastest growing African Airlines. Although Ethiopian Airlines' main hub is in Addis Ababa, the interconnected nature of today's global airline industry meant that it was also heavily affected. The airline had developed an extensive route network across the continent to major destinations in West Africa which was disrupted. In response to the outbreak, the company trained both frontline staff both on-ground at airports and on-board about the causes of the disease and its mode of transmission (Ethiopian Airlines, 2014). The firm also instituted measures to train their staff to minimise the possibility of contagion (Ethiopian Airlines, 2014). Similarly Kenya Airways and many airlines also upgraded the skills of their workers. As Titus Naikuni, the then CEO of Kenya Airways, noted:

*"Our crew members have also been supplied with and trained on the use of Universal Precaution Kits (UPKs) to ensure that they do not come into contact with body fluids while carrying out their duties."* (Naikuni, 2014, p. nd)

This was also motivated by airlines' desire to protect their workers in the wake of the outbreak. By late 2014, it was reported that Ethiopian Airlines was losing about \$8 million a month in sales largely due to concern about Ebola, cancellations and postponements of trips to the West African region (Wall, 2014). In 2014, Kenya Airways also reported around \$110 million loss stemming from the effects of the Ebola outbreak in West Africa (Agbugah, 2014). The airline was affected by the suspension of flights to Sierra Leone and Liberia in August 2014, two



important destinations in West Africa which fed its network (Wokabi, 2014). Even where airlines are operating other routes, they are often affected by under capacity due to inability to connect passengers from the suspended routes to feed their network. The preponderance of evidence thus far suggests that the effects of the outbreak on air travel appeared to be “regional” (OAG, 2014b).

One explanation for this was that the three affected countries are not like major hubs such as Dubai and therefore the effects of the outbreak were confined to mainly a few inter- and intra-African routes. The analysis revealed that a handful of non-African airlines also suspended services to the affected countries. Prominent examples include British Airways, Emirates and Air France. In August 2014, British Airways suspended its four-times-weekly flights to two countries heavily affected by the disease, i.e. Liberia and Sierra Leone (Freeman, 2014). In suspending its services, the British flag carrier attributed the decision to the deteriorating public health situation in the two countries. The company’s press release stated:

*“We have temporarily suspended our flights to and from Liberia and Sierra Leone ... due to the deteriorating public health situation in both countries ... The safety of our customers, crew and ground teams is always our top priority and we will keep the routes under constant review in the coming weeks.”* (BA press release)

Although major airlines such as BA suspended services, other major airlines such as Air France and Dubai's Emirates Airline initially reduced capacity in response to the crisis (OAG, 2014a). Consequently, Emirates also suspended Guinea flights and Air France also discontinued services to Sierra Leone which was in sharp contrast to its previous position that it would maintain air links to all affected countries (Rivers, 2014).

### **Strategic persistence**

Although the outbreak was expected to trigger common responses by all airlines, strategies of airlines diverged as some opted to stay whilst others opted to retrench. The WHO

recommended that airlines maintain air services to help provide transport for aid workers and medical cargo, however, multiple airlines suspended services. One of the most striking aspects of firms' responses was the strategic persistence adopted by some. In sharp contrast to the strategies adopted by the other airlines, Royal Air Maroc (Morocco's largest airline) and Brussels Airlines continued to offer services to the three affected countries (Worland, 2014). In justifying their decision to maintain air services, Geert Sciot, a vice president at Brussels Airlines, noted:

*“It is our humanitarian duty to operate there ... without our flights it would become almost impossible for medical staff to reach the country.”* (Cited in Worland, 2014, p. 1)

The central insight of these cases helps us to better understand why firms in the same environment react differently to such disruptions. This is more so for global companies where the operations can easily become the mechanism for diseases to spread. One of the significant roles of the airline industry in the wake of the crisis was to maintain links to the affected countries as a means of helping facilitate the transportation of supplies and medical staff to the affected zone. Indeed, the containment of the disease partly depended on health professionals gaining access to equipment and materials.

### **Stage 3: Recovery stage**

This stage entails recovering the firms' operations to the level before the effects of Ebola unfolded. By the first half of 2015, the decline in the number of new infections also led to incremental easing of restrictions on routes and ushered a new landscape where recovery from Ebola appeared on the horizon. The decline of new cases was also followed by a number of airlines reinstating services suspended during the height of the Ebola-induced downturn in the industry and returning aircraft into service. The finding suggests that economic activities were severely hampered largely due to the necessary quarantine measures, but also due to a loss of confidence in the system and fear of getting infected by the virus. For many regional airlines

this meant reinstatement of suspended flights and unfreezing of expansion plans before the crisis.

The analysis found that one of the main barriers to recovery stems from stigmatisation of some firms. Stigmatisation and fear not only disrupted firms' operations but also made recovery difficult to achieve (Blas, 2014). Some countries and firms have come to be stigmatised by the outbreak (England & Jenkins, 2014). Although the epicentre of the disease was the three affected countries, it has been suggested that "the whole continent is suffering the stigma" as travellers cancel business and leisure trips to unaffected countries (England & Blas, 2014). The cancellation of bookings appeared to have made recovery difficult to achieve.

A large number of press reports suggest that although around five of the 54 African countries were affected, there has been stigmatisation of some nations and airlines. Indeed, Korean Air Lines cancelled flights to Kenya which had not reported any outbreak at the time. Given the nature of the disease and potential contagion, some airlines which were slow in cancelling flights were stigmatised. The case of Ethiopian Airlines helps to illustrate this point. Although the airline consequently suspended services to the affected zones as retrenchment and suspension of services became more widespread across the population, the late response drew some criticism. As the fears of negative publicity associated with disconnecting services to the affected countries faded, downscaling gained momentum across the industry. Paradoxically, a number of airlines were criticised for not responding quickly enough to the Ebola outbreak and were subsequently stigmatised. The quote below from one of the articles entitled "Ethiopian Airlines should be called Ebola Airlines" captures the emotional sentiments:

*"Ethiopian Airlines remains the only carrier in East Africa to continue several flights daily to these affected regions ... While Addis Ababa is playing on African solidarity sentiments to cover its negligent role in potentially spreading Ebola to the region ... until the Ethiopian dictatorship suspends flights to West African regions suffering from the Ebola outbreak, Ethiopian Airlines should be called Ebola Airlines."* (Madote, 2014, p. nd)

The extensive network of the airline and its high visibility in the region helped in attracting unwanted scrutiny by stakeholders. The analysis uncovered that the final stage was characterised by firms' attempt to prepare better for future outbreak. There are some indications, however, that the outbreak also added to the cost of doing business as the fears left many companies without employees (Atkins & Bolger, 2014). During this post-disruption environment period, airlines drew insights from the event and devoted more attention to how they could quickly adapt and respond to such risks in a timely manner.

### **Discussion and conclusions**

This article sought to examine how companies respond in the wake of major disruptions by focusing specifically on airlines' responses to the Ebola outbreak in West Africa. This paper, therefore, offers a timely analysis of how airlines have responded to the Ebola outbreak. Although the disruption to firms' operations was significant, their responses appeared to entail three key stages. The stages highlight the early uncertainty of the nature of the risks. The early stage sheds light on the embryonic effects of the virus and lack of clear implications which means temporary persistence in the face of lack of information. The preparedness of firms' responses was at a minimum. As the nature of the outbreak became noticeable and the nature of spread became clear, many airlines began to respond through retrenchment and downscaling strategies. This period entailed suspension and cancellation of services as they sought to avoid the three main affected countries. The retrenchment strategy occurred immediately after the first stage as global and regional airlines began to reduce their exposure to the affected areas.

Nevertheless, airlines such as Royal Air Maroc and Brussels Airlines engaged in broadly strategic persistence by maintaining continuous services to key routes to the affected areas even in the face of suspension of services by rival airlines. This demonstrates that airlines did not simply imitate the strategies of others blindly but were quite selective in their strategies influenced by firm-specific factors. The analysis indicates that these firms were largely

motivated by humanitarian factors. The final stage emphasises strategies geared towards recovery and creating resilient organisations capable of dealing with similar crises. The transition to resilient organisation in the post-outbreak environment is rooted in the unique capabilities and resources of individual airlines.

### **Contributions to theory and practice**

The paper makes key contributions to the literature. First, although past studies have stressed risk management as a route to organisational resilience (World Bank, 2013), our understanding of firm strategies for doing so remains limited. The study fills this void in our understanding by developing an integrated framework which elucidates firms' behaviour under such conditions. In addition, in spite of an accumulating body of literature on risk management and disruptions, the relationship between the two remains underexplored. By integrating the two streams of literature, our study adds specificity to how organisations respond to environmental shocks. The study also addresses one of the important, but largely unaddressed, questions in strategy research, i.e. why firms facing the same industry conditions act and react differently to crises and disruptions (Livengood & Reger, 2010).

From a managerial standpoint, the paper reinforces a need for airlines to shift from unplanned responses to such outbreaks towards a proactive approach which emphasises timely allocation of resources and expertise. Proactive scanning of the business environment can help companies respond to similar disruptions in a timely manner. In addition, there is also a need to diversify their scope of activities and routes to be able to withstand sudden falls in demand connected to such outbreaks.

From a public policy standpoint, the study indicates a need for effective and integrated communication systems to provide earlier warning signals to international agencies and aviation authorities to help countries attract additional resources to help contain such outbreaks

(Amankwah-Amoah, 2015b). Such actions can alert authorities to an outbreak of contagious disease and thereby mitigate any potential disruption.

Furthermore, the findings indicate a need for local monitoring in tandem with effective healthcare systems and warning systems. There is also a need for underdeveloped countries to upgrade the expertise of health professionals such as doctors and nurses to meet new challenges. In addition, the findings indicate the need for governments to identify effective mechanisms to determine which air routes are to be cancelled or suspended in the wake of outbreaks to help contain them. The paper provides preliminary insights which can be further explored using a larger sample than has been used here.

## **References**

Agbugah, F. (2014). Kenya Airways blames \$110m loss on Ebola. Retrieved 04.01.2015, from: < <http://www.ventures-africa.com/2014/11/kenya-airways-blames-110m-loss-on-ebola/>>.

Amankwah-Amoah, J. (2015a). Solar energy in sub-Saharan Africa: The challenges and opportunities of technological leapfrogging. *Thunderbird International Business Review*, 57(1), 15–31.

Amankwah-Amoah, J. (2015b). Emerging economies, emerging challenges: Mobilising and capturing value from big data. *Technological Forecasting & Social Change* (<http://dx.doi.org/10.1016/j.techfore.2015.10.022>).

Amankwah-Amoah, J. (2015c). Governments, airlines and employees: An evolving relationship from 1940 to 2010. *Management & Organizational History*, 10(1), 1-20.

Amankwah-Amoah, J., & Debrah, Y. A. (2010). The protracted collapse of Ghana Airways: lessons in organizational failure. *Group & Organization Management*, 35, 636–665.

Amankwah-Amoah, J., & Debrah, Y. A. (2011). The evolution of alliances in the global airline industry: A review of the African experience. *Thunderbird International Business Review*, 53(1), 37–50.

Amankwah-Amoah, J., & Debrah, Y. A. (2014). Air Afrique: The demise of a continental icon. *Business History*, 56(4), 517–546.

Amankwah-Amoah, J., & Durugbo, C. (2016). The rise and fall of technology companies: The evolutionary phase model of ST-Ericsson's dissolution. *Technological Forecasting & Social Change*, 102, 21–33.

Anderson, M. (2014). Ebola: airlines cancel more flights to affected countries. August 22, 5.

Atkins, R., & Bolger, A. (2014). Ebola joins list of risks for financial markets. Retrieved 02.01.2015, from: < <http://www.ft.com/cms/s/0/6775c70c-506e-11e4-8645-00144feab7de.html#axzz3TgPPIHl2>>.

- Barney, J. (1991). Firm resource and sustained competitive advantage. *Journal of Management* 17(1), 99–120.
- BBC (2014). Ebola outbreak: Asky bans flights in West Africa. Retrieved 02.01.2015, from: <<http://www.bbc.co.uk/news/world-africa-28550906>>.
- Bellanaija (2014). NCAA suspends Asky Airlines for flying Ebola virus victim into Nigeria. Retrieved 04.01.2015, from: <<http://www.bellanaija.com/2014/07/29/ncaa-suspends-asky-airlines-for-flying-ebola-virus-victim-into-nigeria/>>.
- Blas, J. (2014). Ebola is one of several risks facing West Africa. Retrieved 04.01.2015, from: <<http://www.ft.com/cms/s/0/c5e74138-4efe-11e4-a1ef-00144feab7de.html#axzz3TgRSTu7L>>.
- Bode, C., Wagner, S. M., Petersen, K. J., & Ellram, L. M. (2011). Understanding responses to supply chain disruptions: insights from information processing and resource dependence perspectives. *Academy of Management Journal*, 54(4), 833-856.
- Bradley, S. W. (2015). Environmental Jolts. *Wiley Encyclopedia of Management*, 3, 1–3.
- Braunscheidel, M. J., & Suresh, N. C. (2009). The organizational antecedents of a firm's supply chain agility for risk mitigation and response. *Journal of Operations Management*, 27(2), 119-140.
- Carter, B., & Meisel, A. (2014). Is it worth screening for Ebola at airports? Retrieved 04.01.2015, from: <<http://www.bbc.co.uk/news/magazine-29787746>>.
- Christopher, M., & Peck, H. (2004). Building the resilient supply chain. *International Journal of Logistics Management*, 15(2), 1-14.
- Cookson, C. (2014). Ebola thrives in absence of weapons to contain it. Retrieved 11.01.2015, from: <<http://www.ft.com/cms/s/0/b66cd10e-279a-11e4-ae44-00144feabdc0.html#axzz3TgRSTu7L>>.
- DeWitt, R. L. (1998). Firm, industry, and strategy influences on choice of downsizing approach. *Strategic Management Journal*, 19, 59–79.
- England, A., & Blas, J. (2014). Ebola stigma hits wider African economies Retrieved 11.01.2015, from: <<http://www.ft.com/cms/s/0/79a1e352-38e5-11e4-9526-00144feabdc0.html#axzz3TgRSTu7L>>.
- England, A., & Jenkins, S. (2014). African leaders warn on Ebola threat to continent's economies. Retrieved 11.01.2015, from: <<http://www.ft.com/cms/s/0/e8db31c0-4d70-11e4-9683-00144feab7de.html#axzz3TgRSTu7L>>.
- Ethiopian Airlines (2014). Notice on Ebola Outbreak in Some Parts of West Africa - Retrieved 04.01.2015, from: <<http://ethiopianairlines.com/en/news/prarchive.aspx?id=540>>.
- Freeman, C. (2014). Liberia attacks British Airways for suspending flights to Ebola-hit country. Retrieved 11.01.2015, from: <<http://www.telegraph.co.uk/news/worldnews/ebola/11148672/Liberia-attacks-British-Airways-for-suspending-flights-to-Ebola-hit-country.html>>.
- Fry, E. (2014). Business in the time of Ebola. *Fortune*, 170(7), 100-106.
- Gittell, J.H., Cameron, K., Lim, S., & Rivas, V. (2006). Relationships, layoffs and organizational resilience: airline responses to crisis of September 11th. *Journal of Applied Behavioral Science*, 42(3), 300–329.

- Hutzschenreuter, T. & Gröne, F. (2009). Product and geographic scope changes of multinational enterprises in response to international competition. *Journal of International Business Studies*, 40, 1149–1170.
- IATA (2014). Press release: Aviation day sets agenda for enhanced intra-African connectivity. Retrieved 11.01.2015, from: <<http://www.iata.org/pressroom/pr/Pages/2014-07-31-01.aspx>>.
- InterVISTAS (2014). *Transforming Intra-African Air Connectivity: The Economic Benefits of Implementing the Yamoussoukro Decision*. Bath, UK: InterVISTAS Consulting LTD
- Juttner, U., & Maklan, S. (2011). Supply chain resilience in the global financial crisis: an empirical study. *Supply Chain Management: An International Journal*, 16(4), 246–259.
- Kenya Airways (2014b). Ebola haemorrhagic fever fact sheet. Retrieved 11.01.2015, from: <[https://www.kenya-airways.com/uploadedFiles/Ebola\\_Haemorrhagic\\_Fever.pdf](https://www.kenya-airways.com/uploadedFiles/Ebola_Haemorrhagic_Fever.pdf)>.
- Kenya Airways (2014b). Kenya Airways Update III: Additional Precautions against Ebola Outbreak. Retrieved 11.01.2015, from: <<https://www.kenya-airways.com/uploadedFiles/Ebola%20Outbreak%20-%20Update%20from%20CEO.pdf>>.
- Kenya Airways (2014c). Media Inquiry. Retrieved 11.01.2015, from: [https://www.kenya-airways.com/uploadedFiles/KQ\\_Media\\_enquiry.pdf](https://www.kenya-airways.com/uploadedFiles/KQ_Media_enquiry.pdf).
- Kleindorfer, P., & Saad, G. (2005). Managing disruption risks in supply chains. *Production and Operations Management*, 14(1), 53–68.
- Litz, R. A. (1996). A resource-based-view of the socially responsible firm: Stakeholder interdependence, ethical awareness, and issue responsiveness as strategic assets. *Journal of Business Ethics*, 15(12), 1355–1363.
- Livengood, R. S., & Reger, R. K. (2010). That's our turf! Identity domains and competitive dynamics. *Academy of Management Review*, 35(1), 48–66.
- Mabey, D., Flasche, S., & Edmunds, W. J. (2014). Airport screening for Ebola. *BMJ*, 349, g6202.
- Madote (2014). Ethiopian Airlines should be called Ebola Airlines. Retrieved 11.01.2015, from: <<http://www.madote.com/2014/10/ethiopian-airlines-should-be-called.html>>.
- Meyer, A. D. (1982). Adapting to environmental jolts. *Administrative Science Quarterly*, 27, 515–537.
- Morrow, J. L., Johnson, R. A., & Busenitz, L. W. (2004). The effects of cost and asset retrenchment on firm performance: the overlooked role of a firm's competitive environment. *Journal of Management*, 30, 189–208.
- Naikuni, T. T. (2014). Media Update: Ebola outbreak around West Africa. 8th August 2014. [https://www.kenya-airways.com/uploadedFiles/KQ\\_Ebola\\_measures\\_Au8.pdf](https://www.kenya-airways.com/uploadedFiles/KQ_Ebola_measures_Au8.pdf)
- Official Airline Guide (2012). *Africa Aviation Market analysis*. Luton: OAG.
- Official Airline Guide (2014b). *OAG Trends Report: What is shaping air travel in 2015? Ebola, mobile phones and the price of oil*. Luton: OAG.
- Official Airline Guide (OAG) (2014a). *Ebola statistics*. Luton: OAG.



- Osugwu, N. (2014). Nigeria: Ebola - Asky Airlines resumes full operations to Nigeria. Retrieved 11.01.2015, from: <<http://allafrica.com/stories/201408041857.html>>.
- Pearce, J. A., & Robbins, D. K. (1993). Toward improved theory and research on business turnaround. *Journal of Management*, 19, 613–636.
- Posen, H. E., & Levinthal, D. 2012. Chasing a moving target: Exploitation and exploration in dynamic environments. *Management Science*, 58(3), 587–601.
- Revilla, E., & Sáenz, M. J. (2014). Supply chain disruption management: Global convergence vs national specificity. *Journal of Business Research*, 67(6), 1123–1135.
- Rivers, M. (2014). Ebola clips wings of high-flying ASKY. *African Business*, 412, 66–67.
- Save the Children (2015). *A wake-up call: Lessons from Ebola for the world's health systems*. London: Save the Children.
- Sheffi, Y. (2005). *The resilient enterprise*. Cambridge, MA: MIT Press.
- Sheffi, Y., & Rice, J. B. Jr. (2005). A supply chain view of the resilient enterprise. *MIT Sloan Management Review*, 47(1), 41–48.
- Simchi-Levi, D., Schmidt, W., & Wei, Y. (2014). From superstorms to factory fires managing unpredictable supply-chain disruptions. *Harvard Business Review*, 92(1/2), 96-101.
- The Economist (2013). Aspiring Africa. 406(8825), 12.
- The Economist (2014a). Unintended consequences. 412(8903), 50.
- The Economist (2014b). Ebola and travel: Flying fear. Retrieved 11.01.2015, from: <<http://www.economist.com/blogs/gulliver/2014/10/ebola-and-travel-0>>.
- The Economist (2014c). The ebola alarmists. 413(8908), 36.
- The Economist (2014d). Ebola's global reach. Retrieved 11.01.2015, from: <<http://www.economist.com/blogs/graphicdetail/2014/10/daily-chart-5>>.
- The Economist (2014e) Panicking only makes it worse. 412(8900), 50.
- The Economist (2014f). Fever rising. 412(8900), 48–50.
- The Economist (2015). The toll of a tragedy. Retrieved 11.01.2015, from: <<http://www.economist.com/blogs/graphicdetail/2015/02/ebola-graphics>>.
- The Guardian (2014). Ebola outbreak: pan-African airline halts flights to West African countries. July, 30.
- Tomlin, B. (2006). On the value of mitigation and contingency strategies for managing supply chain disruption risks. *Management Science*, 52(5), 639–657.
- Wall, R. (2014). Ethiopian Airlines' sales hit by Ebola fears. Retrieved 11.01.2015, from: <<http://www.wsj.com/articles/ethiopian-airlines-sales-hit-by-ebola-fears-1416498962>>.

- Webby, R. J., & Webster, R. G. (2003). Are we ready for pandemic influenza? *Science*, 302(5650), 1519-1522.
- Welch, C. (2000). The archaeology of business networks: The use of archival records in case study research. *Journal of Strategic Marketing*, 8(2), 197–208.
- Wokabi, C. (2014). Kenya Airways posts Sh10bn loss on reduced travel over insecurity, Ebola. Retrieved 25.06.2014, from: <<http://www.nation.co.ke/business/Kenya-Airways-posts-Sh10bn-loss-on-reduced-travel/-/996/2520968/-/tdu2s6z/-/index.html>>.
- Worland, J. (2014). Why one airline flies to West Africa despite Ebola. Time.com, 14 October, 1.
- World Bank (2011). *World Bank 2011: Conflict, security, and development*. Washington, DC: World Bank.
- World Bank (2013). *Risk and opportunity: Managing risk for development*. Washington DC: International Bank for Reconstruction and Development/World Bank.
- World Bank (2014). Ebola: New World Bank Group study forecasts billions in economic loss if epidemic lasts longer, spreads in West Africa. Retrieved 04.01.2015, from: <<http://www.worldbank.org/en/news/press-release/2014/10/08/ebola-new-world-bank-group-study-forecasts-billions-in-economic-loss-if-epidemic-lasts-longer-spreads-in-west-africa>>.
- Yin, R. K. (2003). *Case study research: Design and methods*. Third edition, Thousand Oaks, CA: Sage Publications.

**Table 1: Number of intra and inter-Africa routes created between 2002 and 2012**

<b>Area</b>	<b>Number of new routes</b>	<b>Percentage share</b>
Intra-Africa	623	53.661
<b>Inter-Africa</b>		
Europe	407	35.056
Middle East	91	7.838
Asia	22	1.895
North America	10	0.861
Latin America	5	0.431
Southwest Pacific	3	0.258

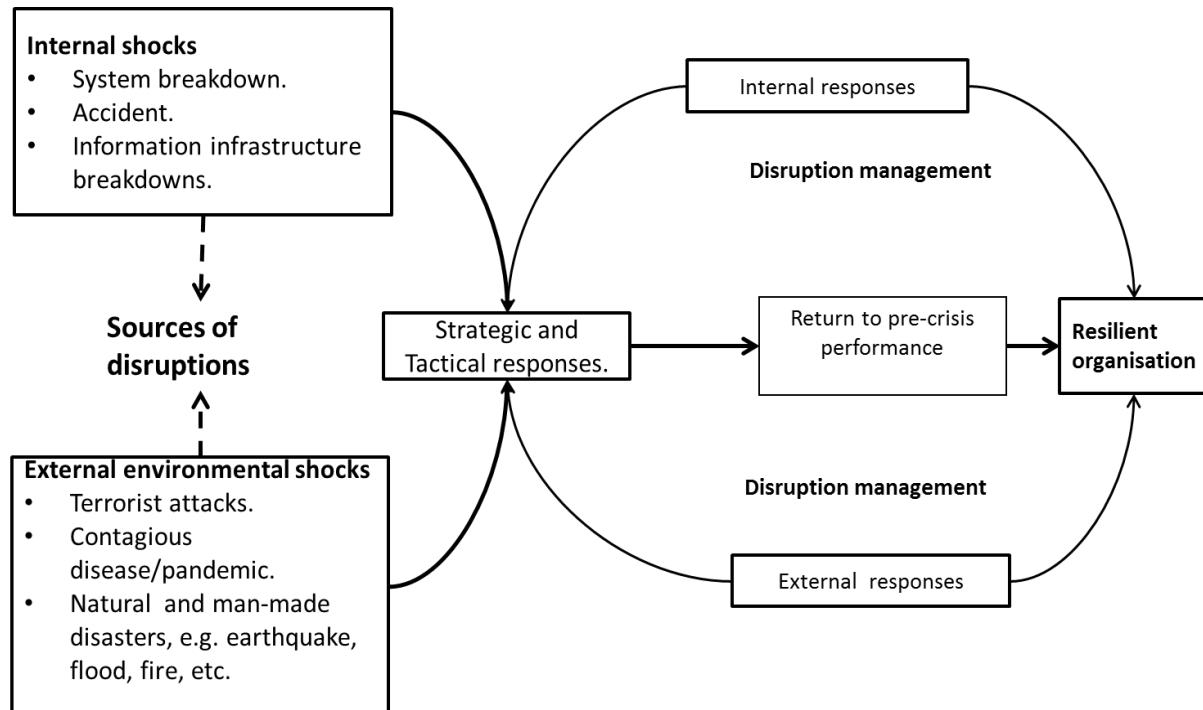
Data source: OAG, 2012

**Table 2: Summary of some airlines affected by the Ebola outbreak**

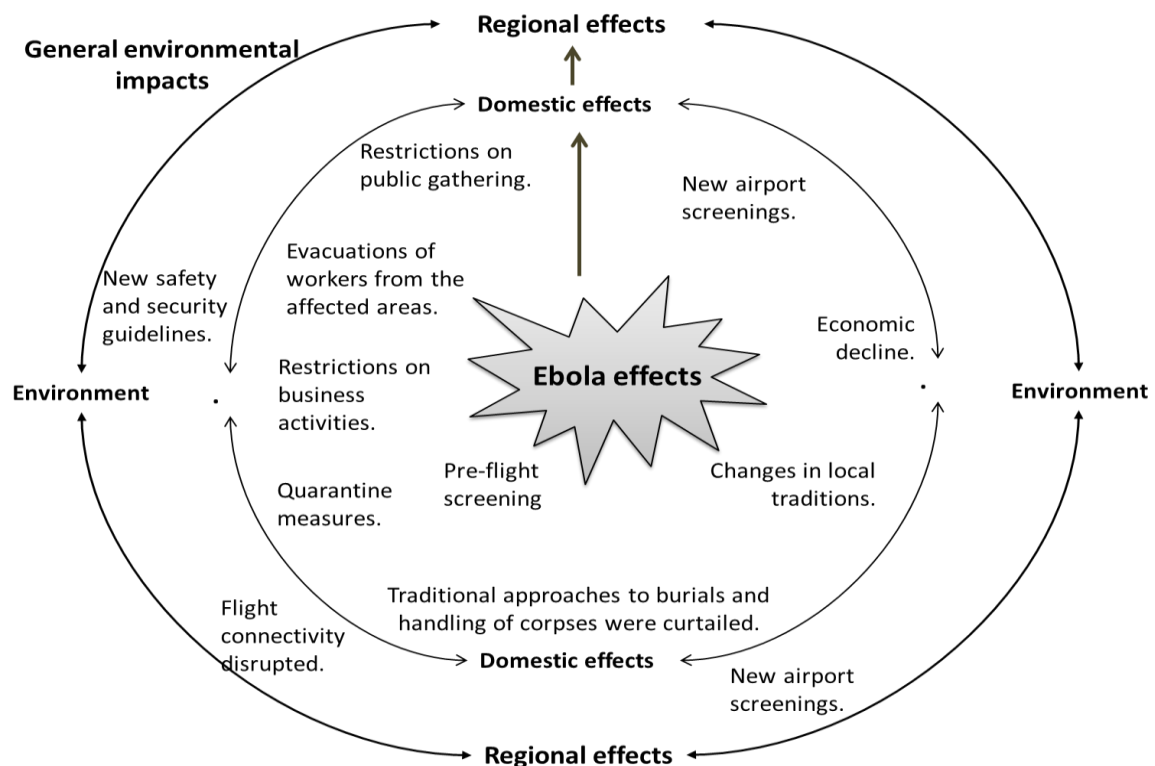
List of airlines	Country of origin	Effects and responses
<b>African airlines</b>		
Senegal Airlines	Senegal	<ul style="list-style-type: none"> <li>Temporarily stopped air services to Sierra Leone.</li> <li>The airline has put investment plans on hold.</li> <li>The airline experienced considerable delays due to new security measures.</li> </ul>
South African Airways	South Africa	<ul style="list-style-type: none"> <li>Postponement/cancellation of flights.</li> </ul>
Kenya Airways	Kenya	<ul style="list-style-type: none"> <li>Froze services to Liberia and Sierra Leone.</li> <li>Training of some employees.</li> </ul>
Ethiopian Airlines	Ethiopia	<ul style="list-style-type: none"> <li>The airline has sought to reduce capacity as a means of mitigating the effects.</li> <li>Screening of staff for signs of infection.</li> <li>New training of some employees.</li> </ul>
ASKY Airlines	Togo	<ul style="list-style-type: none"> <li>Suspended services to the three affected countries.</li> <li>Restricted employees' movement.</li> </ul>
Air Côte d'Ivoire	Côte d'Ivoire	<ul style="list-style-type: none"> <li>Suspended the launch of new air services to the three countries.</li> </ul>
Gambia Bird	Gambia	<ul style="list-style-type: none"> <li>Temporarily stopped services to and from Sierra Leone.</li> <li>Suspended the launch of new air services to the three countries.</li> </ul>
Arik Air	Nigeria	<ul style="list-style-type: none"> <li>Halted direct flights to Liberia and Sierra Leone</li> <li>Postponed the launch of new air services to the three countries.</li> </ul>
<b>Non-African airlines</b>		
Air France	France	<ul style="list-style-type: none"> <li>Temporarily stopped air services to and from Sierra Leone.</li> <li>The airline stocks fell and flights were scaled back.</li> </ul>
British Airways	UK	<ul style="list-style-type: none"> <li>Suspended air services to Liberia and Sierra Leone.</li> <li>Temporarily stopped services to and from Sierra Leone.</li> </ul>
Korean Air Lines	S. Korea	<ul style="list-style-type: none"> <li>Suspended flights to and from Kenya, its only destination in Africa at the time.</li> </ul>
Emirates	United Arab Emirates	<ul style="list-style-type: none"> <li>Suspended Guinea flights.</li> </ul>

**Data sources:** synthesised by the authors from: Freeman, 2014; Rivers, 2014; Anderson, 2014; OAG, 2014a.

**Figure 1: A unified framework of organisational responses to disruption**



**Figure 2: The environmental effects of the Ebola outbreak**



**Figure 3: Evolution of firms' response to Ebola**

